WHAT IS CLAIMED IS:

1. A semiconductor laser diode comprising:

a first-conductivity type semiconductor substrate;

a first-conductivity type clad layer formed over the substrate;

an active layer formed over the first-conductivity type clad layer;

a second-conductivity type clad layer formed over the active layer, and provided with a ridge; and

a light confining layer formed on the second-conductivity type clad layer around at least the ridge, while including one or more higher-order mode absorption layers having an energy band gap lower than optical energy produced in the active layer, the light confining layer having a refractive index lower than the second-conductivity type clad layer.

2. The semiconductor laser diode according to claim 1, wherein the light confining layer further includes one or more refractive index control layers having a refractive index lower than that of the higher-order mode absorption layers, the refractive index control layers being laminated along with the higher-order mode absorption layers in an alternate manner.

3. The semiconductor laser diode according to claim 1, wherein the light confining layer further includes a low refractive index layer having a refractive index equal to or lower than an average index of the higher-order mode absorption layers and refractive index control layers.

4. The semiconductor laser diode according to claim 1, further comprising:

a current confining layer formed over the light confining layer, the current confining layer being made of a first conductivity-type semiconductor material.

5. The semiconductor laser diode according to claim 1, wherein the higher-order mode absorption layers are made of a second-conductivity type AlGaAs or AlGaInP-based material.

6. The semiconductor laser diode according to claim 2, wherein the refractive index control layers are made of a second-conductivity type AlGaAs or AlGaInP-based material.

7. The semiconductor laser diode according to claim 5, wherein the higher-order mode absorption layers have an Al content determined to make the higher-order mode absorption layers have an energy band gap capable of absorbing a wavelength of light produced in the active layer.

8. The semiconductor laser diode according to claim 6, wherein the refractive index control layers have an Al content higher than that of the higher-order mode absorption layers so that the refractive index of the light confining layer is lower than that of the second-conductivity type clad layer.

9. A semiconductor laser diode comprising:

a first-conductivity type semiconductor substrate;

a first-conductivity type clad layer formed over the substrate;

an active layer formed over the first-conductivity type clad layer;

a second-conductivity type clad layer formed over the active layer, and provided with a ridge; and

a light confining layer formed on the second-conductivity type clad layer, and made of a first-conductivity type semiconductor material, the light confining layer including higher-order mode absorption layers having an energy band gap lower than optical energy produced in the active layer, and refractive index control layers having a refractive index lower than that of the higher-order mode absorption layers, the higher-order mode absorption layers and refractive index control layers being laminated in an alternate manner.